

IN THE CLAIMS:

Claim 1 (currently amended) An isolated nucleic acid molecule, which encodes a fluorescent protein, selected from the group consisting of:

(a) a nucleic acid which encodes a protein comprising the amino acid sequence as shown in SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, or 28;

(b) a nucleic acid comprising a nucleotide sequence as shown in SEQ ID NOs: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, or 27;

(c) a nucleic acid that hybridizes under stringent conditions to the nucleic acid of (a) or (b) above;

(d) a nucleic acid that encodes a protein that has at least about 60% sequence identity to the amino acid sequence of (a) above;

(e) a nucleic acid that has at least about 55% sequence identity to the nucleotide sequence of (b) above;

(f) a nucleic acid which encodes a protein having at least one amino acid substitution, deletion or insertion in the amino acid sequence as shown in SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, or 28[[]] ;

(g) a derivative or mimetic of the nucleic acid of (a), (b), (c), (d), (e) or (f) above;

(h) a mutant of the nucleic acid of (a), (b), (c), (d), or (e) above;

(i) a nucleic acid which differs from the nucleic acid of (b), (c), (d), (e), (f), (g) or (h) above due to the degeneracy of genetic code; and

(j) a fragment of the nucleic acid of (a) or (b) above encoding a peptide of at least 10 amino acid residues in length.

Claim 2 (original) The nucleic acid molecule of claim 1, wherein said nucleic acid is isolated from an organism from a phylum *Arthropoda*.

Claim 3 (original) The nucleic acid molecule of claim 1, wherein said nucleic acid is isolated from an organism from a subclass *Copepoda*.

Claim 4 (original) The nucleic acid molecule of claim 1, wherein said nucleic acid is isolated from a family *Pontellidae*.

Claim 5 (original) A vector comprising the nucleic acid molecule according to claim 1.

Claim 6 (currently amended) An expression cassette comprising (a) the nucleic acid molecule according to Claim 1; and (b) regulatory elements for the expression of said nucleic acid molecule in ~~the~~ a desired host-cell.

Claim 7 (currently amended) A cell comprising the nucleic acid molecule according to claim 1; ~~the vector according to claim 5, or the expression cassette according to claim 6.~~

Claim 8 (currently amended) A stable cell line comprising the nucleic acid molecule according to claim 1, ~~the vector according to claim 5, or the expression cassette according to claim 6.~~

Claim 9 (currently amended) A transgenic plant comprising the nucleic acid molecule according

to claim 1, ~~the vector according to claim 5, or the expression cassette according to claim 6.~~

Claim 10 (currently amended) A transgenic animal comprising the nucleic acid molecule according to claim 1, ~~the vector according to claim 5, or the expression cassette according to claim 6.~~

Claim 11 (original) A method for producing a fluorescent protein, said method comprising (a) providing a nucleic acid molecule according to claim 1 operably linked to suitable expression regulatory elements (b) expressing the fluorescent protein from said nucleic acid molecule, and (c) isolating the protein substantially free of other proteins.

Claim 12 (original) A nucleic acid molecule comprising a fragment of the nucleic acid molecule according to claim 1, said fragment encoding a peptide of at least 100 amino acids in length.

Claim 13 (original) A nucleic acid molecule having a sequence that is substantially the same as, or identical to a nucleotide sequence of at least 300 residues in length of the nucleic acid molecule according to claim 1.

Claim 14 (currently amended) An isolated fluorescent protein selected from the group consisting of:

(a) a protein comprising the amino acid sequence as shown in SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, or 28;

(b) a protein encoded by the nucleic acid molecule comprising a nucleotide sequence as shown in SEQ ID NOs: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, or 27;

(c) a protein that has at least about 60% sequence identity to the amino acid sequence of (a) or (b) above;

(d) a mutant of the protein of (a), (b) or (c) above;

(e) a protein having at least one amino acid substitution, deletion or insertion in the amino acid sequence as shown in SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, or 28[[.]] ;

(f) a derivative of the protein of (a), (b), (c), (d) or (e) above;

(g) a fragment of the protein of (a), (b), (c), (d), (e) or (f) above comprising of at least 10 amino acid residues in length; and

(h) a protein having a sequence that is substantially the same as, or identical to the amino acid sequence of at least 100 residues in length of (a) or (b) above.

Claim 15 (original) A fusion protein comprising the protein according to claim 14.

Claim 16 (original) An antibody specifically binding to the protein according to claim 14.

Claim 17 (currently amended) A kit comprising the nucleic acid according to claim 1, ~~the vector according to claim 5, the expression cassette according to claim 6, the protein according to claim 14, the fusion protein according to claim 15,~~ or a means for producing the same.

Claim 18 (currently amended) An oligonucleotide probe or primer comprising ~~the~~ a nucleotide

sequence capable of hybridizing to ~~the~~ a nucleotide sequence selected from the group consisting of SEQ ID NOs. 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27.

Claim 19 (original) A method for labeling a biological molecule, comprising coupling said biological molecule to the protein according to claim 14.

Claim 20. (original) A method for labeling a cell comprising production of the protein according to claim 14 in the cell.

Claim 21 (currently amended) A method for labeling a cell organelle comprising production of the protein according to claim 14 fused to ~~the~~ a suitable subcellular localization signal in the cell.

Claim 22 (currently amended) A method for analyzing a biological molecule, cell or cell organelle comprising detection of fluorescence signal from the protein according to claim 14 ~~or~~ 15.

Claim 23 (original) A method for analyzing a biological molecule, cell or cell organelle comprising expression of the nucleic acid molecule according to claim 1 in a cell.

Claim 24 (currently amended) A method of detecting a biological molecule comprising detection of fluorescence signal from the protein according to claim 14 ~~or~~ 15.

Claim 25 (new) A method for analyzing a biological molecule, cell or cell organelle comprising detection of fluorescence signal from the protein according to claim 15.

Claim 26 (new) A method of detecting a biological molecule comprising detection of fluorescence signal from the protein according to claim 15.